2/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0105819

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHEM. COMPN. OF THE ORE WAS FE 38.50PERCENT, FEO 5.32PERCENT, SIO 21.0PERCENT, AL SUB2 O SUB3 7.24PERCENT, CAO 2.40PERCENT, MGO 0.86PERCENT, S 0.16PERCENT, P SUB2 O SUB5 2.34PERCENT, AS 0.12PERCENT, V 0.085PERCENT, AND OTHERS 11.30PERCENT. ANTHRACITE AND COAL OC WERE USED AS REDUCING AGENTS, AND CHEM. PURE CAO AS A FLUX. THE REMOVAL OF AS WAS DETD. AS A FUNCTION OF THE AMT. OF COAL OC IN THE PELLETS, AT 1000DEGREES FOR 30 MIN, WITH DIAM. OF PELLETS 8 MM AND THE COMPN. OF GASEOUS MEDIUM 20PERCENT CO SUB2 AND 80PERCENT N, AND AS A FUNCTION OF TEMP. AT 700-1100DEGREES FOR 20 MIN, WITH 20PERCENT ANTHRACITE, GASEOUS MEDIUM N, CONSUMPTION 0.21.-MIN, DIAM. OF THE PELLETS 4-6 AND 15-18 MM. THE MOST SUITABLE METHOD FOR THE REMOVAL OF AS WAS THE USE OF GASEOUS POTENTIAL; I.E., THE REMOVAL WAS STATED AS A FUNCTION OF THE POTENTIAL OF THE GAS PHASE AND THE TEMP. THE TESTS WERE CARRIED OUT AT 900DEGREES FOR 30 MIN, WITH A GASEOUS MEDIUM OF 70PERCENT CO SUB2 AND 30PERCENT H; AND DIAM. OF THE PELLETS 8 MM. THE AS REMOVAL WAS 90PERCENT.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--BEHAVIOR OF IRON ORE MATERIALS DURING REDUCTION -U-

AUTHOR-(05)-POKHVISNEV, A.N., SPEKTOR, A.N., YUSFIN, YU.S., BAZILEVICH, T.N., PYRIKOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(2), 97-105

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--IRON ORE, CHEMICAL REACTION MACHANISM, THERMAL EFFECT, CHEMICAL REDUCTION, SINTERING FURNACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1951 STEP NO--UR/0133/70/030/002/0097/0105

CIRC ACCESSION NO--AP0115759

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115759

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FLUXED AND NONFLUXED PLAIN AND DOUBLE LAYER PELLETS AND SAMPLES OF SINTER, BOTH EXPTL. AND COM., FROM MANY SOVIET, JAPANESE, AND AUSTRIAN SOURCES, WERE HEATED ISOTHERMALLY AT 600-1200DEGREES IN H, CO, AND CO-CO SUB2-N MIXT., OR WERE HEATED BY GRADUALLY INCREASING THE TEMP. FROM 300 TO 1200DEGREES IN 4 HR AND PERIODICALLY CHANGING THE GAS COMPN. TREATED SAMPLES WERE TESTED FOR VOL. AND STRENGTH CHANGES, MICRO AND MACROSTRUCTURE VARIATIONS, AND FOR POROSITY. THE RESULTS ARE DESCRIBED AND PRESENTED IN DIAGRAMS. REDN. WITH H AND CO LOWERS THE STRENGTH OF ALL MATERIALS TESTED. THE CRUSHING STRENGTH AND ABRASION RESISTANCE OF PELLETS ARE, HOWEVER, LOWER THAN THOSE OF SINTER, WHILE THE VOL. OF PELLETS SHOWS A GREATER INCREASE. A MAX. VOL. INCREASE AND STRENGTH DROP OCCUR WHEN HEMATITE BEGINS TO TRANSFORM INTO MAGNETITE. THE VOL. INCREASE OBSD. DEPENDS LARGELY ON THE STRUCTURE AND STRESS OF SAMPLES, RATHER THAN ON C PPTN. A 1.5 FOLD LOWER SWELLING ON H REDN. IS CAUSED BY THE DIFFERENT REDN. MECHANISM INVOLVED. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.983.044.7

MAZUROVSKIY, B. YA., YUSHANTSEVA, T. V., and VOLOCHINSKAYA, L. M.,

"Effect of Pulse Loads on the Properties of Al-Mg Alloys"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 7, Jul 71, pp 19-21

Abstract: Investigations were conducted at the Electrohydraulics Planning and Design Bureau on the effect of pulse loads on the mechanical properties and structure of deformed AMg6 Al-Mg alloy. The following conclusions were made as a result of the study.

On stamped bilges two zones of maximum deformation were revealed: in the center and at the flange edge. Hardness of AMg6BM and AMg6BN alloys increases with increased deformation. The zones of greatest deformation for AMg6M alloy are the zones of maximum strengthening in which tensile and yield strengths are increased and relative elongation is reduced. In alloy AMg6BN in the zones of greatest thinning, tensile and yield strengths are decreased and relative elongation is increased in comparison with the initial values. Maximum increase of hardness, and of tensile and yield strengths and maximum lowering of elongation was produced in a thin-sheet bilge (s = 3 mm). In AMg6BM alloy a more intensive growth in observed, after stamping, for yield strength than for tensile strength and a sharp lowering of elongation is

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USSR

MAZUROVSKIY, B. YA., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 7, Jul 71, pp 19-21

observed in comparison with initial values. Bilges stamped by the electrohydraulic method without annealing have mechanical properties satisfying specified requirements. Changes in microstructure and surface defects were not detected on stamped bilges. The electrohydraulic method of stamping bilges and similar parts of Al-Mg alloys was recommended for industrial usuage. Four figures, one table, four bibliographic references.

2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EXTRACTION OF COMPLEX ACIDS WITH OXYGEN CONTAINING DILUENTS. XIII. EXTRACTION OF POLONIUM, II AND IV, FROM SOLUTIONS OF HYDRIODIC ACID -U-

AUTHOR-(02)-IOFA, B.Z., YUSHCHENKO, A.S.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(1), 65-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COMPLEX COMPOUND, OXYGEN, BROMIDE, KETONE, IODIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0152 STEP NO--UR/0186/70/012/001/0065/0069

CIRC ACCESSION NO--AP0132438

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720002-3"

...struction and ... exchange of ..., mapping, and control of bacterial and viral ... morbidity
in 1969 in 83 USSR and sterilization in the control of epidemiological information, and control of infectious foci,
and hygiene, including the Central Institutes of infections, and the role of
Institute of Disinfection and Sterilization of microbiology, epidemiology was carried out
theses were written. Topics of ... A total ... epidemiology and the All-Union...

272 011

CIRC ACCESSION NO--AP0132438 UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- PROCESSING DATE--04DEC70

ABSTRACT. IN THE EXTN. OF PO(IV) FROM AQ. HI SOLNS. BY DIPROPYL KETONE (I) OR AMYL ACETATE (II) THE DISTRIBUTION COEFF. D 1ST DECREASES AND THEN INCREASES WITH INCREASING HI CONCN. C SUBHI IN THE AQ. PHASE (BETWEEN 0.1 AND 4.0 MOLE-L.), WITH A MIN. AT C SUBHI EQUALS 0.7 MOLE-L.; THE VALUES OF D FOR THE EXTN. WITH I (FOR II IN PARENTHESES) FROM 0.1, 0.7 AND 4.0 M HI SOLNS. ARE 250, 55, AND 280 (7.3, 1.7, AND 25), RESP. IN THE EXTN. OF PO(IV) BY N-HEXYL ALC. (III) D 1ST DECREASES, THEN INCREASES, AND AGAIN DECREASES WITH INCREASING C SUBHI; SAMPLE VALUES AT C SUBHI EQUALS 0.1, 0.5, 3.0, AND 4.5 MOLE-L. ARE 79, 35, 77, AND 53.5, RESP. IN THE EXTN. OF PO(II) FROM AQ. HI SOLNS. BY I, II, OR III THE D-C SUBHI RELATION IS IN ALL CASES THE SAME (BUT THE ABS. VALUES OF D ARE SOMEWHAT SMALLER) AS IN THE CASE OF PO(IV). IN THE EXTN. OF BOTH PO(IV) AND PO(II) BY BU SUB2 O, D PASSES THROUGH A MIN. (AT C SUBHI EQUALS 0.5-0.7 MOLE-L.) WHEN C SUBHI IS INCREASED FROM 0.1 TO 4.5 MOLE-L., BUT IN ALL CASES THE ABS. VALUES OF D ARE VERY LOW (BETWEEN 0.003 AND 0.1). THE MIN. ON THE D-C SUBHI CURVES ARE ATTRIBUTED TO THE PRESENCE OF 2 DIFFERENT PO COMPLEXES IN THE WEAKLY ACID SOLNS.: POI SUB3 PRIME NEGATIVE AND POI SUB4 PRIME2 NEGATIVE FOR DIVALENT PO, AND POI SUB5 PRIME NEGATIVE AND POI SUB6 PRIME2 NEGATIVE FOR TETRAVALENT PO; ONLY POI SUB4 PRIME2 NEGATIVE OR POI SUB6 PRIME2 NEGATIVE ARE STABLE IN MORE CONCD. HI SOLNS. THE PARTIAL FORMATION CONSTS. OF THE HIGHER IODIDE COMPLEXES OF DIVALENT AND TETRAVALENT PO ARE BETA PRIME4I EQUALS 130 AND BETA ... IODIDE COMPLEXES ... THE

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 028

TITLE--STARTING TEMPERATURE OF A REACTION BETWEEN OXIDES IN THE SOLID PHASE -U-

AUTHOR-(04)-YUSFIN, YU.S., KARABASOV, YU.S., YUSUPKHODZHAYEV, A.A., SUKHININA, V.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (3), 53-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--SEMICONDUCTOR MATERIAL, CALCIUM OXIDE, TEMPERATURE EFFECT, CHEMICAL REACTION, ELECTRON DENSITY, STRUCTURAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0370/70/000/003/0053/0055

PROXY REEL/FRAME--3007/1872

CIRC ACCESSION NO--AP0137069

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 028

CIRC ACCESSION NO--AP0137069

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING SEQUENCE OF REACTIONS IS PROPOSED ON THE BASIS OF DTA, PETROGRAPHIC ANAL., X RAY STRUCTURAL ANAL., AND CONDUCTOMETRIC ANAL.: AT 515-200EGREES CA(OH) SUB2 EQUALS CAO PLUS H SUB2 O, AT 670-150EGREES CAO PLUS FE SUB2 O SUB3 EQUALS CAO.FE SUB2 O SUB3, AND AT 750-800DEGREES CAO.FE SUB2 O SUB3 PLUS CAO EQUALS 2CAO.FE SUB2 O SUB3. THE PRIMARY REACTION PRODUCT WAS ALWAYS CAO.FE SUB2 O SUB3 INDEPENDENT OF THE WT. RATIO OF REACTING SUBSTANCES. OXIDE SEMICONDUCTORS BECOME REACTIVE WHEN THE CONCN. OF ELECTRONS IN THE FREE ZONE OF THE SEMICONDUCTOR SHARPLY INCREASES; THIS CORRESPONDS TO THE CHANGE FROM IMPURITY TO INTRINSIC COND. IN THE SEMICONDUCTOR OXIDE.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--REMOVAL OF ARSENIC DURING THE REDUCTION OF KERCH TOBACCO (COLORED) ORE -U-
AUTHOR-(02)-SPEKTOR, A.N., YUSFIN, YU.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(1), 22-5

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--COAL, ARSENIC, CHEMICAL SEPARATION, ORE, CHEMICAL REDUCTION, IRON, IRON OXIDE, SILICON OXIDE, ALUMINUM OXIDE, CALCIUM OXIDE, MAGNESIUM OXIDE, SULFUR, VANADIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0950 STEP NO--UR/0145/70/013/001/0022/0025

CIRC ACCESSION NO--AT0105819
UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0105819

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHEM. COMPN. OF THE ORE WAS FE 38.50PERCENT, FEO 5.32PERCENT, SIO 21.0PERCENT, AL SUB2 O SUB3 7.24PERCENT, CAO 2.40PERCENT, MGO 0.86PERCENT, S 0.16PERCENT, P SUB2 O SUB5 2.34PERCENT, AS 0.12PERCENT, V 0.085PERCENT, AND OTHERS 11.30PERCENT. ANTHRACITE AND COAL OC WERE USED AS REDUCING AGENTS, AND CHEM. PURE CAO AS A FLUX. THE REMOVAL OF AS WAS DETD. AS A FUNCTION OF THE AMT. OF COAL OC IN THE PELLETS, AT 1000DEGREES FOR 30 MIN, WITH DIAM. OF PELLETS 8 MM AND THE COMPN. OF GASEOUS MEDIUM 20PERCENT CO SUB2 AND 80PERCENT N, AND AS A FUNCTION OF TEMP. AT 700-1100DEGREES FOR 20 MIN, WITH 20PERCENT ANTHRACITE, GASEOUS MEDIUM N, CONSUMPTION 0.21.-MIN, DIAM. OF THE PELLETS 4-6 AND 15-18 MM. THE MOST SUITABLE METHOD FOR THE REMOVAL OF AS WAS THE USE OF GASEOUS POTENTIAL; I.E., THE REMOVAL WAS STATED AS A FUNCTION OF THE POTENTIAL OF THE GAS PHASE AND THE TEMP. THE TESTS WERE CARRIED OUT AT 900DEGREES FOR 30 MIN, WITH A GASEOUS MEDIUM OF 70PERCENT CO SUB2 AND 30PERCENT H; AND DIAM. OF THE PELLETS 8 MM. THE AS REMOVAL WAS 90PERCENT.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--BEHAVIOR OF IRON ORE MATERIALS DURING REDUCTION --U-

AUTHOR-(05)-POKHVISNEV, A.N., SPEKTOR, A.N., YUSFIN, YU.S., BAZILEVICH, T.N., PYRIKOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(2), 97-105

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--IRON ORE, CHEMICAL REACTION MACHANISM, THERMAL EFFECT, CHEMICAL REDUCTION, SINTERING FURNACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1951 STEP NO--UR/0133/70/030/002/0097/0105

CIRC ACCESSION NO--AP0115759

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115759

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FLUXED AND NONFLUXED PLAIN AND DOUBLE LAYER PELLETS AND SAMPLES OF SINTER, BOTH EXPTL. AND COM., FROM MANY SOVIET, JAPANESE, AND AUSTRIAN SOURCES, WERE HEATED ISOTHERMALLY AT 600-1200DEGREES IN H, CO, AND CO-CO SUB2-N MIXT., OR WERE HEATED BY GRADUALLY INCREASING THE TEMP. FROM 300 TO 1200DEGREES IN 4 HR AND PERIODICALLY CHANGING THE GAS COMPN. TREATED SAMPLES WERE TESTED FOR VOL. AND STRENGTH CHANGES, MICRO AND MACROSTRUCTURE VARIATIONS, AND FOR POROSITY. THE RESULTS ARE DESCRIBED AND PRESENTED IN DIAGRAMS. REDN. WITH H AND CO LOWERS THE STRENGTH OF ALL MATERIALS TESTED. THE CRUSHING STRENGTH AND ABRASION RESISTANCE OF PELLETS ARE, HOWEVER, LOWER THAN THOSE OF SINTER, WHILE THE VOL. OF PELLETS SHOWS A GREATER INCREASE. A MAX. VOL. INCREASE AND STRENGTH DROP OCCUR WHEN HEMATITE BEGINS TO TRANSFORM INTO MAGNETITE. THE VOL. INCREASE OBSD. DEPENDS LARGELY ON THE STRUCTURE AND STRESS OF SAMPLES, RATHER THAN ON C PPTN. A 1.5 FOLD LOWER SWELLING ON H REDN. IS CAUSED BY THE DIFFERENT REDN. MECHANISM INVOLVED. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

UDC 621.983.044.7

USSR

MAZUROVSKIY, B. YA., YUSHAITSEVA, T. V., and VOLOCHINSKAYA, L. M.,

"Effect of Pulse Loads on the Properties of Al-Mg Alloys"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 7, Jul 71, pp 19-21

Abstract: Investigations were conducted at the Electrohydraulics Planning and Design Bureau on the effect of pulse loads on the mechanical properties and structure of deformed AMg6 Al-Mg alloy. The following conclusions were made as a result of the study.

On stamped bilges two zones of maximum deformation were revealed: in the center and at the flange edge. Hardness of AMg6BM and AMg6BN alloys increases with increased deformation. The zones of greatest deformation for AMg6M alloy are the zones of maximum strengthening in which tensile and yield strengths are increased and relative elongation is reduced. In alloy AMg6BN in the zones of greatest thinning, tensile and yield strengths are decreased and relative elongation is increased in comparison with the initial values. Maximum increase of hardness, and of tensile and yield strengths and maximum lowering of elongation was produced in a thin-sheet bilge (s = 3 mm). In AMg6BM alloy a more intensive growth in observed, after stamping, for yield strength than for tensile strength and a sharp lowering of elongation is

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USSR

MAZUROVSKIY, B. YA., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 7, Jul 71, pp 19-21

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2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EXTRACTION OF COMPLEX ACIDS WITH OXYGEN CONTAINING DILUENTS. XIII. EXTRACTION OF POLONIUM, II AND IV, FROM SOLUTIONS OF HYDRIODIC ACID -U-

AUTHOR-(02)-IOFA, B.Z., YUSHCHENKO, A.S.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(1), 65-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COMPLEX COMPOUND, OXYGEN, BROMIDE, KETONE, IODIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0152 STEP NO--UR/0186/70/012/001/0065/0069

CIRC ACCESSION NO--AP0132438 UNCLASSIFIED

2/2 011 UNCLASSIFIED

CIRC ACCESSION NO--AP0132438 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE EXTN. OF PO(IV) FROM AQ. HI SOLNS. BY DIPROPYL KETONE (I) OR AMYL ACETATE (II) THE DISTRIBUTION COEFF. D IST DECREASES AND THEN INCREASES WITH INCREASING HI CONCN. C SUBHI IN THE AQ. PHASE (BETWEEN 0.1 AND 4.0 MOLE-L.), WITH A MIN. AT C SUBHI EQUALS 0.7 MOLE-L.; THE VALUES OF D FOR THE EXTN. WITH I (FOR II IN PARENTHESES) FROM 0.1, 0.7 AND 4.0 M HI SOLNS. ARE 250, 55, AND 280 (7.3, 1.7, AND 25), RESP. IN THE EXTN. OF PO(IV) BY N-HEXYL ALC. (III) D IST DECREASES, THEN INCREASES, AND AGAIN DECREASES WITH INCREASING C SUBHI; SAMPLE VALUES AT C SUBHI EQUALS 0.1, 0.5, 3.0, AND 4.5 MOLE-L. ARE 79, 35, 77, AND 53.5, RESP. IN THE EXTN. OF PO(II) FROM AQ. HI SOLNS. BY I, II, OR III THE D-C SUBHI RELATION IS IN ALL CASES THE SAME (BUT THE ABS. VALUES OF D ARE SOMEWHAT SMALLER) AS IN THE CASE OF PO(IV); IN THE EXTN. OF BOTH PO(IV) AND PO(II) BY BU SUB2 O, D PASSES THROUGH A MIN. (AT C SUBHI EQUALS 0.5-0.7 MOLE-L.) WHEN C SUBHI IS INCREASED FROM 0.1 TO 4.5 MOLE-L., BUT IN ALL CASES THE BAS. VALUES OF D ARE VERY LOW (BETWEEN 0.003 AND 0.1). THE MIN. ON THE D-C SUBHI CURVES ARE ATTRIBUTED TO THE PRESENCE OF 2 DIFFERENT PO COMPLEXES IN THE WEAKLY ACID SOLNS.: PO I SUB3 PRIME NEGATIVE AND PO I SUB4 PRIME2 NEGATIVE FOR DIVALENT PO, AND PO I SUB5 PRIME NEGATIVE AND PO I SUB6 PRIME2 NEGATIVE FOR TETRAVALENT PO; ONLY PO I SUB4 PRIME2 NEGATIVE OR PO I SUB6 PRIME2 NEGATIVE ARE STABLE IN MORE CONCD. HI SOLNS. THE PARTIAL FORMATION CONSTS. OF THE HIGHER IODIDE COMPLEXES OF DIVALENT AND TETRAVALENT PO ARE BETA PRIMEII EQUALS 130 AND BETA PRIMEIV EQUALS 403, I.E., THE IODIDE COMPLEXES ARE MORE STABLE THAN THE RESP. CHLORIDE AND BROMIDE COMPLEXES.

UNCLASSIFIED

USSR

UDC 614.4.001.5(47) "1969"

SUMAROKOV, A. A. and YUSHCHENKO, G. V., Central Institute of Epidemiology

"Brief Results of Scientific-Research Work Done in 1969 On the Problem 'General Principles of the Epidemic Process; Scientific Basis for Reducing Infectious Morbidity and Eradicating Infections'"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 48, No 6, Jun 71, pp 141-145

Abstract: Research on such problems as the general principles governing the epidemic process and its control, methods of reducing infectious morbidity and eradicating infections, methods or prophylaxis of bacterial and viral diseases, organization of the study, mapping, and control of infectious foci, organization of the exchange of epidemiological information, and the role of disinfection and sterilization in the control of infections was carried out in 1969 in 83 USSR and republic institutes of microbiology, epidemiology, and hygiene, including the Central Institute of Epidemiology and the All Union Institute of Disinfection and Sterilization. A total of 320 papers on these themes were written. Topics of study included the prevalence of disease epidemics throughout the USSR as a whole and in large separate sections of

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720002-3"

USSR

SUMAROKOV, A. A., et al, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 48, No 6, Jun 71, pp 141-145

the country during 1965-1968. The results of these studies served as the basis for a compilation of analytical and statistical data on the dynamics, level, and distribution of infectious in these years. Considerable attention was given to the investigation of paratyphoid and typhoid. It was found that paratyphoid epidemics are largely limited to paratyphoid B, with other types of paratyphoid occurring only sporadically. It was established also that chronic typhoid carriers differ from other people in their immunological reactivity, probably as a result of the constant immunological stress caused by the presence of the antigen. Considerable work has been done on shigellosis, typing strains, and distribution. Data concerning the transmission, spread, and methods of control of dysentery have been published. Experiments also established the prophylactic efficacy of bacteriophages in the control of dysentery in children. An epidemiological analysis of the morbibity of infectious hepatitis established the prophylactic efficacy of gamma-globulin vaccination of children aged 1-12; also the prophylactic efficacy of serum polyglobulin prepared at the Leningrad Institute of Hematology and Blood Transfusion. Principles of the laws governing the transmission and spread of

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USSR

SUMAROKOV, A. A., et al, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 48, No 6, Jun 71, pp 141-145

diphtheria have been determined, and a decree concerning control of the disease was promulgated by the Ministry of Health USSR in April 1969. An investigation of pertussis established that the duration of vaccinal immunity to the infection is limited to 1-2 years, and that revaccination at intervals of not less than two years is necessary. Of the streptococcal infections, the chief attention was paid to scarlet fever. It was noted that in general there has been a decline in the incidence of the disease. A difference between the northern and southern regions of the country in the dynamics of drop in disease incidence due probably to the difference in the immunological structure of the organism, has been noted. Controlled epidemiological tests of live allantoic and cultural influenza vaccines established the ineffectiveness of these vaccines as prophylactic agents. The practical use of human interferon as a prophylactic agent against influenza is recommended. Modern communication systems such as the telegraph and toletype make possible the rapid transmission of epidemiological information to sanitary epidemiological stations and other antiepidemic establishments. An important role in epidemic control is played by disinfection and sterilization. A number of disinfectants against

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USSR

SUMAROKOV, A. A., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 48, No 6, Jun 71, pp 141-145

viral infections have been developed; measures for the control of staphylococcal infection in surgery have been adopted; measures to control blood-sucking insects in the petroleum-gas regions of Siberia and the Far East have been studied; and portable disinfection and extermination devices have been developed.

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USSR UDC: 621.791.052.011:539.3

YUSHCHENKO, K. A., MAKHNENKO, V. I., and STARUSHCHENKO, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR

"Thermal Stresses in the Welded Joints of Invar and Stainless Steel at Cryogenic Temperature"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 73, pp 27-29

Abstract: The authors use computational methods and the Minsk-22 computer to study the distribution of thermal stresses in the welded joints of pipes made from Invar, and Invar and the following types of stainless steel: OKH18N10T and OOOKH20N16AG6. Increasing the coefficient of thermal expansion of the seam metal up to alpha = $4-5 \times 10^{-6}$ degree^{-1} in the welded joints of Invar results in an insignificant increase in thermal stresses for temperature changes in the 4-293°K interval. Significant stresses arise in the welded joint at alpha = $10-12 \cdot 10^{-6}$ degree^{-1}. The use of the KH18N10T type material as an addition agent is not desirable in the welded joints of pipelines made from 36N grade alloy, where the pipelines operate under conditions of cyclical temperature change within the 4-293°K limits (without taking into consideration the application of external loads). Instead, 36NGMT filler wire should be used. When using 36NGMT for welding the following materials, which have to operate at temperature changes at low

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USSR

YUSHCHENKO, K. A., et al, Avtomaticheskaya Svarka, No 10, Oct 73, pp 27-29

temperatures, the welding has to be carried out carefully: 36N-KH18N10T, 36N-OOOKH20-N16AG6. The stresses are evoked by differences in the coefficients of thermal expansion during thermal changes within the 4-293°K interval.

UDC 539.411.5

USSR

YUSHCHENKO, K. A., KAKHOVSKIY, N. I., KVASNEVSKIY, O. G., MON'KO, G. G., SOLOKHA, A. M., (Kiev), Institute of Electric Welding imeni Ye. O. Paton

"The Influence of Second-Phase Separations on the Enbrittlement of High-Alloy Austenitic Steels at Low Temperatures"

Kiev, Problemy Prochnosti, No 8, 1970, pp 99-103

Abstract: In the article are presented results of research carried out with the aim of ascertaining the influence of nitrogen alloying upon the tendency of some austenitic steels, used in cryogenics, toward brittle destruction. 7 figures, 1 table, 7 bibliographic entries.

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UDC 539.4.42

USSR

KAKHOVSKIY, N. I., YUSHCHENKO, K. A., MON'KO, G. G., SOLOKHA, A. M., and KVASNEVSKIY, O. G., Kiev, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences UkrSSR

"Fundamentals of Alloying Steel and Weld Metal for Structures Operating Continuously at Low Temperatures"

Kiev, Problemy Prochnosti, No 8, Aug 70, pp 119-125

Abstract: Results are presented of a series of investigations for determining the mechanical properties of Cr-Ni-N and Cr-Ni-Mn-N steels for the purpose of establishing optimal quantities of alloying elements for obtaining austenite-stable steels under conditions of long-duration operation at low temperatures (to - 100°C). The results show that a 15% Ni content in Cr-Ni-N and Cr-Ni-Mn-N steels is sufficient for complete austenite stability. The effect of alloying metals on the mechanical properties of steels and weld metals is shown in graphs.

USSR UDC 539.4.015

YUSHCHENKO, K. A., STARTSEV, V. I., IL'ICHEV, V. Ya., MON'KO, G. G., LIVSHITS, L. A., KAPLAN, L. I., STEPANOV, G. A., and GRUDZINSKIY, B. V., Kiev, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences, UkrSSR

"Low-Temperature Properties of Austenitic Steels"

Kiev, Problemy Prochnosti, No 10, Oct 70, pp 113-115

Abstract: A study was made of the mechanical properties of some steels of industrial melts destined for use at temperatures down to -269°C. A low carbon content was characteristic for the investigated steels, and some were also alloyed with nitrogen. The 21-16-8-N type stable-austenitic steel had the best strength properties and smallest reduction in plasticity and toughness at reduced temperatures.

USSR

UDC 621.791:669.245

YUSHCHENKO, K. A., KAKHOVSKIY, N. I., and STARUSHENKO, T. M., Institute of Electric Welding imeni Ye. O. Paton; IL'ICHEV, V. YA., Physicotechnical Institute of Low Temperatures, Academy of Sciences Ukrainian SSR; ZAKHAROV, A.I., Central Scientific Research Institute of Ferrous Metallurgy

"Weldability and Properties of Invar Weld Joints at Low Temperatures"

Kiev, Avtomaticheskaya Svarka, No 9, Sept 72, pp 39-42

Abstract: The purpose of this investigation was to develop the technology of welding Fe-Ni alloys (36N, 36NKh, and 39N) with a thickness up to 5 mm and to evaluate the weldability of Invar with a thickness up to 12 mm in order to obtain a strong and dense joint with the required mechanical and thermophysical properties in the 20 to -253°C interval. Chemical composition of the Fe-Ni alloys was (in %):

	C	Si	Mn	S	P	Ni	Cr
36N	0.032	0.23	0.43	0.009	0.008	36.1	----
36NKh	0.035	0.15	0.52	0.004	0.004	37.0	0.49
36N	0.034	0.19	0.50	0.008	0.009	39.9	----

Samples were submerged-arc welded with a nonconsumable tungsten electrode in argon, both with filler wire and without it, with AN-26 and AnF-5 fluxes.

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YUSHECHENKO, K.A., et al., Avtomaticheskaya Svarka, No 9, Sep 72, pp 39-42

Low-temperature studies of the weld joints were carried out at the physicotechnical Institute of Low Temperatures, Academy of Sciences Ukrainian SSR, the Central Scientific Research Institute of Ferrous Metallurgy, and the Institute of Electric Welding. Analysis of the mechanical and thermophysical properties of weld joints at low temperatures where 36NGT, 36NGTCe, and 36NGCe filler wires were used showed that alloying with Ti and Mn produces a dense joint where the alloy strength is equal to that of the base metal of the seam and possesses high impact strength and ductility at -253°C. Experimental studies of welded Invar (6 and 12 mm thick) showed that the use of 36NGT filler wire yields seams with defects (hot cracks). 6 figures, 2 tables, 8 bibliographic references.

USSR

UDC 547.298.1+547.554

BORISOVA, Ye. Ya., YUSHCHENKO, T. M., and CHERKASOVA, Ye. M., Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov, Moscow

"Aminoamides. VI. Synthesis of Aminoamides of the Pentane Series"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 6, Jun 71, pp 1173-1175

Abstract: With the view of investigating the physiological and physicochemical properties of the products obtained, work on aminoamides with the general formula II was continued and compounds of this type with n = 4 were synthesized from 1-dialkylamino-5-alkyl- and 1-dialkylamino-5-dialkyl-5-pentanols (I; n = 4) by subjecting the latter to the action of nitriles in the presence of H_2SO_4 : $R''R'C(OH)-(CH_2)_nNR_2$ (I) + $R'''CH(H_2SO_4) \rightarrow R'''RC(NHCOR'')-(CH_2)_nNR_2$ (II). The aminopentanols (I) were prepared by a method described by T. T. Vasil'yeva et al in Izv. AN SSSR, Ser. Khim., 2817, 1970. New compounds II with n = 4 and R = H, R' = R''' = Et, R'' = Me; R = H, R' = R''' = Et, R'' = Ph; R = R' = R''' = Et, R'' = Me; R = R' = R''' = Et, R'' = Ph; R = H, R' = Et, R'' = Me, R''' = Bu; R = H, R' = Et, R'' = Ph, R''' = Bu; R = R' = R'' = R''' = Me; R = R' = R''' = Me, R'' = Ph were synthesized. The physical constants of these compounds are listed. In the conversion of I to

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USSR

BORISOVA, Ye. Ya., et al, Zhurnal Organicheskoy Khimii, Vol 7, No 6, Jun 71, pp 1173-1175

II, compounds I with two alkyl groups at the carbinol C atom, such as those prepared in this instance, reacted much more readily than compounds I with one alkyl and one phenyl group at this atom. Compounds of the latter type had been investigated in earlier work. The secondary and tertiary amino-pentanols I (n = 4) that had been prepared reacted with equal facility in the conversion to aminoamides II.

USSR UDC 577.1:615.7/9

IYEVLEVA, YA. A., PETRUSHINA, V. I., and YUSHCHENKO, V. A.

"The Effect of Alkyl Sulfates on Skin"

Neftepererabotka i Neftekhimiya. Ref. Sb. (Petroleum Refining and Petroleum Chemistry. Collection of Reports), No 3, 1972, pp 53-54 (from Referativnyy Zhurnal -- Biologicheskaya Khimiya, Otdel'nyy Vypusk, No 19, 1972, Abstract No 19F2031 by L. A. Shavarina)

Translation: The skin irritation threshold (SIT) for six commerical alkyl sulfates of fatty acids (AFA) was established in experiments on guinea pigs. The AFA are used for the production of shampoos. A dependence was established between the SIT of AFA on the composition of starting alcohols. SIT of imported preparations "Empicol" and "Saktipon" prepared from alcohols of identical composition (fraction C_{12} - C_{14}) amounted to 4% of PAV in aqueous solution. The SIT increased to 8-12% when the triethylamine salt of the alkyl sulfate fraction C_{16} - C_{18} and 30% high-molecular hydrocarbons C_{16} - C_{18} were used (domestic products). The SIT of the alkyl sulfate salt of C_{10} - C_{13} fraction was 7%, while SIT of the triethylamine salt was only 5% compared

USSR

IYEVLEVA, YE. A., et al., Neftepererabotka i Neftekhimiya. Ref. Sb., No 3, 1972, pp 53-54

with the Na salt. The threshold concentrations of triethylamine salt in commerical samples were considerably lower than those of model samples of identical fractional composition, despite the fact that the latter contained Na salts of alkyl sulfates. It is concluded that low-molecular alcohols decrease considerably the irritating effect of PAV.

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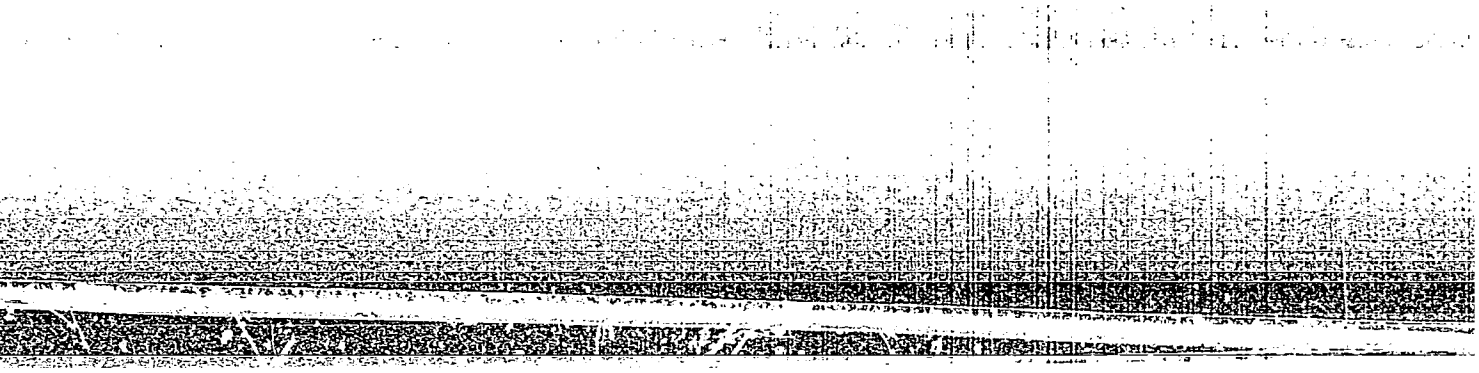

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203720002-3"

USSR

SUMAROKOV, A. A., et al, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 48, No 6, Jun 71, pp 141-145

the country during 1965-1968. The results of these studies served as the basis for a compilation of analytical and statistical data on the dynamics, level, and distribution of infectious in these years. Considerable attention was given to the investigation of paratyphoid and typhoid. It was found that paratyphoid epidemics are largely limited to paratyphoid B, with other types of paratyphoid occurring only sporadically. It was established also that chronic typhoid carriers differ from other people in their immunological reactivity, probably as a result of the constant immunological stress caused by the presence of the antigen. Considerable work has been done on shigellosis, typing strains, and distribution. Data concerning the transmission, spread, and methods of control of dysentery have been published. Experiments also established the prophylactic efficacy of bacteriophages in the control of dysentery in children. An epidemiological analysis of the morbidity of infectious hepatitis established the prophylactic efficacy of gamma-globulin vaccination of children aged 1-12; also the prophylactic efficacy of serum polyglobulin prepared at the Leningrad Institute of Hematology and Blood Transfusion. Principles of the laws governing the transmission and spread of

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USSR

SUMAROKOV, A. A., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 48, No 6, Jun 71, pp 141-145

viral infections have been developed; measures for the control of staphylococcal infection in surgery have been adopted; measures to control blood-sucking insects in the petroleum-gas regions of Siberia and the Far East have been studied; and portable disinfection and extermination devices have been developed.

4/4

-USSR UDC: 621.791.052.011:539.3

YUSHCHENKO, K. A., MAKHNENKO, V. I., and STARUSHCHENKO, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR

"Thermal Stresses in the Welded Joints of Invar and Stainless Steel at Cryogenic Temperature"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 73, pp 27-29

Abstract: The authors use computational methods and the Minsk-22 computer to study the distribution of thermal stresses in the welded joints of pipes made from Invar, and Invar and the following types of stainless steel: OKH18N10T and OOOKH2ON15AG6. Increasing the coefficient of thermal expansion of the seam metal up to alpha = $4-5\times10^{-6}$ degree^{-1} in the welded joints of Invar results in an insignificant increase in thermal stresses for temperature changes in the 4-293°K interval. Significant stresses arise in the welded joint at alpha = $10-12\cdot10^{-6}$ degree^{-1}. The use of the KH18N10T type material as an addition agent is not desirable in the welded joints of pipelines made from 36N grade alloy, where the pipelines operate under conditions of cyclical temperature change within the 4-293°K limits (without taking into consideration the application of external loads). Instead, 36NGMT filler wire should be used. When using 36NGMT for welding the following materials, which have to operate at temperature changes at low

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USSR

YUSHCHENKO, K. A., et al, Avtomaticheskaya Svarka, No 10, Oct 73, pp 27-29

temperatures, the welding has to be carried out carefully: 36N-KH18N10T, 36N-OOOKH20-N16AG6. The stresses are evoked by differences in the coefficients of thermal expansion during thermal changes within the 4-293°K interval.

2/2

USSR

UDC 539.411.5

YUSHCHENKO, K. A., KAKHOVSKIY, N. I., KVASNEVSKIY, O. G., MON'KO, G. G., SOLOKHA, A. M., (Kiev), Institute of Electric Welding imeni Ye. O. Paton

"The Influence of Second-Phase Separations on the Enbrittlement of High-Alloy Austenitic Steels at Low Temperatures"

Kiev, Problemy Prochnosti, No 8, 1970, pp 99-103

Abstract: In the article are presented results of research carried out with the aim of ascertaining the influence of nitrogen alloying upon the tendency of some austenitic steels, used in cryogenics, toward brittle destruction. 7 figures, 1 table, 7 bibliographic entries.

1/1

USSR UDC 539.4.42

KAKHOVSKIY, N. I., YUSHCHENKO, K. A., MON'KO, G. G., SOLOKHA, A. M., and KVASNEVSKIY, G. G., Kiev, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences UkrSSR

"Fundamentals of Alloying Steel and Weld Metal for Structures Operating Continuously at Low Temperatures"

Kiev, Problemy Prochnosti, No 8, Aug 70, pp 119-125

Abstract: Results are presented of a series of investigations for determining the mechanical properties of Cr-Ni-N and Cr-Ni-Mn-N steels for the purpose of establishing optimal quantities of alloying elements for obtaining austenite-stable steels under conditions of long-duration operation at low temperatures (to - 100°C). The results show that a 15% Ni content in Cr-Ni-N and Cr-Ni-Mn-N steels is sufficient for complete austenite stability. The effect of alloying metals on the mechanical properties of steels and weld metals is shown in graphs.

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USSR

UDC 539.4.015

YUSHCHENKO, K. A., STARTSEV, V. I., IL'ICHEV, V. Ya., MON'KO, G. G., LIVSHITS, L. A., KAPLAN, L. I., STEPANOV, G. A., and GRUDZINSKIY, B. V., Kiev, Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences, UkrSSR

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USSR

UDC 621.791:669.245

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2/2

USSR

UDC 547.298.1+547.554

BORISOVA, Ye. Ya., YUSHCHENKO, T. M., and CHERKASOVA, Ye. M., Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov, Moscow

"Aminoamides. VI. Synthesis of Aminoamides of the Pentane Series"

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Abstract: With the view of investigating the physiological and physicochemical properties of the products obtained, work on aminoamides with the general formula II was continued and compounds of this type with n = 4 were synthesized from 1-dialkylamino-5-alkyl- and 1-dialkylamino-5-dialkyl-5-pentanols (I; n = 4) by subjecting the latter to the action of nitriles in the presence of H_2SO_4 : $R''R\,C(OH)-(CH_2)_nNR_2'$ (I) + $R'''CN(H_2SO_4) \rightarrow R'''RC(NHCOR'')-(CH_2)\,NR_2'$ (II). The aminopentanols (I) were prepared by a method described by T. T. Vasil'yeva et al in Izv. AN SSSR, Ser. Khim., 2817, 1970. New compounds II with n = 4 and R = H, R' = R''' = Et, R'' = Me; R = H, R' = R''' = Et, R'' = Ph; R = R' = R''' = Et, R'' = Me; R = R' = R''' = Et, R'' = Ph; R = H, R' = Et, R'' = Me, R''' = Bu; R = H, R' = Et, R'' = Ph, R''' = Bu; R = R' = R'' = R''' = Me; R = R' = R''' = Me, R'' = Ph were synthesized. The physical constants of these compounds are listed. In the conversion of I to

1/2

USSR

BORISOVA, Ye. Ya., et al, Zhurnal Organicheskoy Khimii, Vol 7, No 6, Jun 71, pp 1173-1175

II, compounds I with two alkyl groups at the carbinol C atom, such as those prepared in this instance, reacted much more readily than compounds I with one alkyl and one phenyl group at this atom. Compounds of the latter type had been investigated in earlier work. The secondary and tertiary amino-pentanols I (n = 4) that had been prepared reacted with equal facility in the conversion to aminoamides II.

2/2

USSR UDC 577.1:615.7/9

IYEVLEVA, YA. A., PETRUSHINA, V. I., and YUSHCHENKO, V. A.

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Neftepererabotka i Neftekhimiya. Ref. Sb. (Petroleum Refining and Petroleum Chemistry. Collection of Reports), No 3, 1972, pp 53-54 (from Referativnyy Zhurnal -- Biologicheskaya Khimiya, Otdel'nyy Vypusk, No 19, 1972, Abstract No 19F2031 by L. A. Shavarina)

Translation: The skin irritation threshold (SIT) for six commerical alkyl sulfates of fatty acids (AFA) was established in experiments on guinea pigs. The AFA are used for the production of shampoos. A dependence was established between the SIT of AFA on the composition of starting alcohols. SIT of imported preparations "Empicol" and "Saktipon" prepared from alcohols of identical composition (fraction C_{12} - C_{14}) amounted to 4% of PAV in aqueous solution. The SIT increased to 8-12% when the triethylamine salt of the alkyl sulfate fraction C_{16} - C_{18} and 30% high-molecular hydrocarbons C_{16} - C_{18} were used (domestic products). The SIT of the alkyl sulfate salt of C_{10} - C_{13} fraction was 7%, while SIT of the triethylamine salt was only 5% compared

USSR

IYEVLEVA, YE. A., et al., Neftepererabotka i Neftekhimiya. Ref. Sb., No 3, 1972. pp 53-54

with the Na salt. The threshold concentrations of triethylamine salt in commerical samples were considerably lower than those of model samples of identical fractional composition, despite the fact that the latter contained Na salts of alkyl sulfates. It is concluded that low-molecular alcohols decrease considerably the irritating effect of PAV.

2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--FORMULATING DIFFERENTIAL EQUATIONS FOR MANOMETERS CONTAINING FLUID -U-
AUTHOR-(03)-DRCZDOVICH, V.N., KUZNETSOV, A.D., YUSHCHENKO, V.I.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. PRIBOROSTROYENIYE, NO 2, 1970, PP 97-101
DATE PUBLISHED--------70

SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS

TOPIC TAGS--MANOMETER, DIFFERENTIAL EQUATION, LAGRANGE EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1686 STEP NO--UR/0146/70/000/002/0097/0101

CIRC ACCESSION NO--AT0123510

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0123510

ABSTRACT/EXTRACT--(U) GP-0- ASSTRACT. A METHOD IS PROPOSED FOR FORMULATING DIFFERENTIAL EQUATIONS FOR MANOMETERS OF LOG SYSTEMS. THE PRESENCE OF FLUID IN THEIR SENSING ELEMENTS AND IN THE PULSE LINES IS CONSIDERED. THE METHODOLOGY IS BASED ON THE USE OF LAGRANGE EQUATIONS WHICH HAVE FOUND WIDE APPLICATION IN THE THEORY OF SOLID BODY VIBRATION.

FACILITY: LENINGRAD INSTITUTE OF PRECISE MECHANICS AND OPTICS.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--KINETIC PRINCIPLES OF CATALYTIC REACTIONS IN A PULSE MICROMETHOD -U-

AUTHOR-(02)-ANTIPINA, T.V., YUSHCHENKO, V.V.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(4), 849-51 (PHYS CHEM)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--REACTION KINETICS, CATALYSIS, PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0214 STEP NO--UR/0020/70/191/004/0849/0851

CIRC ACCESSION NO--AT0132486
UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0132486

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EQUATION IS GIVEN WHICH CAN BE USED TO DESCRIBE THE KINETICS FOR CATALYTIC REACTIONS WHICH ARE RETARDED BY THE REACTION PRODUCTS OVER A WIDE RANGE OF PRESSURES FOR THE REACTANTS IN THE INITIAL PULSE. THIS MAKES IT POSSIBLE TO STUDY THE KINETIC RULES FOR CATALYTIC PROCESSES IN THE INTERMEDIATE RANGE, BOUNDED BY THE VALUES OF THE RETARDATION COEFF. OF BETA EQUALS 0 AND BETA EQUALS 1.0, WHICH HAS BEEN STUDIED VERY LITTLE. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 801:51

VEL'BITSKIY, I. V., YUSHCHENKO, Ya. L.

"Linguistic Approach to the Process of Teaching Algorithmic Languages and Work on Computers"

Primeneniye Tsifr. Vychisl. Mashin Dlya Obuch. Programmir, [Application of Digital Computers for the Teaching of Programming--Collection of Works], Kiev, 1970, pp 64-69, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V698).

No Abstract.

1/1

USSR

YUSHCHENKO, Ye. L., BABENKO, L. P. and ROGACH, V. D.

"Basic Problems of Realization of COBOL-ALMO Translators"

Materialy Mezhvuz. Konf. po Mat. Obespecheniyu Avtomatizir. Sistem Upr. [Materials of Inter-University Conference on Automatic Control System Software -- Collection of Works], Moscow, 1973, pp 146-151 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V702).

Translation: The peculiarities of the realization of COBOL related to the use of ALMO are studied. First of all, the basic difficulties in this realization in comparison to a translator from COBOL to a specific machine are noted: the need to "orient the output programs to a certain universality, making them equally suitable for an entire class of machines" and the orientation of ALMO language "to second-generation machines, little suited for the solution of automatic data processing problems." These difficulties are partially overcome by means of the insertion apparatus of ALMO and partially by means of a system of interpreting programs. The set of standard programs suggested was selected considering the provision of both convenience in writing of working programs and in programming of translators.

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USSR

Yushchenko, Yu. L., Babenko, L. P. and Rogach, V. D., Materialy Mezhvuz. Konf. po Mat. Obespecheniyu Avtomatizir. Sistem Upr., Moscow, 1972, pp 146-151.

The exchange of information with external storage (input-output in particular) is largely included among the functions of the operational systems of modern computers. Therefore, in producing input-output verbs in the COBOL programs, the thousands channel of ALMO is used, connecting the ALMO program to the operational systems of specific machines.

The work features a more detailed presentation of problems of programming of the descriptions of data, work with structures, input-output verbs and sequence control.

The insertion apparatus, a direct element in most macrogenerators in ALMO, is used not only for adjustment of working programs to the parameters of specific machines, but also to reduce the number of jumps in the translator, and also for many other purposes.

In the end, it is specially emphasized that "in designing the output program for the COBOL-ALMO translator, interpreting subroutines are used quite broadly: of the 16 COBOL operators, 6 are fully and 5 partially realized by these subroutines."

L. Khizder

USSR UDC: 681.3

DOVGYALLO, A. M., NIKITIN, A. I., PLATONOV, B. A., SEMOTYUK, V. P., YUSHCHENKO, Ye. L.

"On One Approach to Developing a System of Instruction in Programming Languages on a Digital Computer Base"

V sb. Primeneniye tsifr. vychisl. mashin dlya obuch. programmir. (Use of Digital Computers for the Teaching of Programming--collection of works), Kiev, 1970, pp 25-30 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V780)

[No abstract]

USSR UDC: 681.327.17:681.3.06

VELBITSKIY, I. V., MIKHAYLOV, G. A., YUSHCHENKO, Ye. L.

"Program Syntax Control Device"

USSR Author's Certificate No 236861, Filed 27 Dec 67, Published 1 Jul 69 (from RZh-Avtomatika, Telemekhanika i vychislitelnaya tekhnika, No 9, Sep 70, Abstract No 9B476P)

Translation: This Author's Certificate introduces a device for syntactic checking of programs written in algorithmic language when they are input to a computer. The device contains a long-term memory in which the grammar of the language is recorded, a temporary memory, and a comparison device. There is one illustration.

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USSR

UDC 518.5.681.3.06

ADONTS, M. M., YUSHCHENKO, Ye. L.

"Solution of Large Systems of Algebraic Equations by Scale of Coefficients"

Mat. Obestpecheniye Etsvm. Vyp. 3 [Computer Software, No. 3 -- Collection of Works] Kiev, 1970, pp 3-25 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V679).

Translation: A method is described for solving systems of high order linear algebraic equations with symmetrical matrices such as the matrices of internal and cross conductivities ||Y|| having arbitrary structure of placement of non zero elements. Increasing the possible order of the system is achieved by reducing the initial information, in that the machine is given only the non zero coefficients of the system and additional information on the initial structure of the matrix. The method selected for solution of the system is realized by special reviewing and changing of additional information causing changes in the magnitude and number of coefficients introduced.

1/1

USSR

UDC 8.74

VEL'BITSKIY, I. V., MEYTUS, V. YU., YUSHCHENKO, YE. L.

"M-Formalisms and their Application to Operation Systems"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 22-30 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V427)

Translation: A study was made of the problem of applying the formalisms of M-systems to describe operation systems. The M-systems are a method of giving a representation of one language in another combining certain properties of grammars and the converters. The arbitrary M-system which converts the language L_Σ into the language L_Δ solves the following problems: first, it recognizes that an arbitrary word of the input belongs to the language L_Σ; secondly, during the recognition process it carries out a syntactic analysis of this word; thirdly, at the output it constructs the word in the language L_Δ into which the input word had to be transmitted for representation defined by the M-system. In the general case the M-system comprises p input tapes on which the word in the L_Σ language is written, q output tapes on which the word in the L_Δ language is written during the operating process and a set of tagged rules. It is noted that the introduction of several input tapes arises from the fact that in many

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VEL'BITSKIY, I. V., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 22-30

practical applications it is convenient to give the input information in different ways -- input it at each step in parallel and not in series, for example, the program and the initial data for the input information and the control input, and so on. The same thing also pertains to several output tapes on which the pattern of the word is written from L_Σ. Each rule includes the following elements: 1) the tag for the given rule; 2) instructions regarding operations of reading from the input tapes and writing on the output tape; 3) instructions regarding operations with the internal memory elements of the M-system; 4) the set of tags of admissible rule-receivers. Various types of memories (for example, cartridge, counter, reel, and others) with admissible operations on them and conditions of their executionability can be used as the internal memory elements. The bibliography has 12 entries.

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USSR

UDC 8.74

BABENKO, L. P., BATRAK, YE. T., YUSHCHENKO, YE. L.

"Basic Problems of Executing the A-COBOL Language"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 150-161 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V481)

Translation: The algorithms for the A-COBOL-ALMO translator created on the basis of the COBOL-ALMO translator is described. The memory allocation algorithms in the COBOL-translator is based on compiling special information tables about the data containing the information about their size, properties, location and hierarchy. The dimensions of the elementary data are defined by their standards; the dimensions of the group data are defined by the dimensions of their elementary components. In the algorithm for calculating the data dimensions, the stack memory system is used. When determining the location of the data, the accepted relative addressing principle is considered for which each recording is allotted a separate address file. As the beginning of the reckoning, the beginning of the write is taken, and as the reckoning unit, the bit . For data of a new type -- bit data in the A-COBOL execution -- a special system has been developed with the beginning of reading at the beginning of

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BABENKO, L. P., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 150-161

writing; the read unit is a bit. The bit (boolean) data are packed densely in the memory of the ALMO machine. When loading such data, special load files are formed which contain the allocation constants and the relative distances of each of the pieces of data from the beginning of write. These files are formed by the interpreting subprograms of the translator on the basis of the table of lengths of elements of the bit writes compiled when examining the data information tables considering the data hierarchy and their recurrence rate. The stack memory is also used here complicated by the algorithm for considering the recurrence of the bit data when compiling the element length table. For translation of the basic operators of A-COBOL combining the operations of corresponding COBOL operators and the address operations on the indexes, an algorithm was developed which forms the reference in the operating program to the corresponding subroutines of the interpreting system. For translation of the descriptions of the fields, an algorithm was developed which defines their parameters (the field dimension, the field index dimension, and so on) which are used when placing (selecting) an object in the field. The description of the syntax of the A-COBOL media supplementing the translator from COBOL to the translator from A-COBOL to the output language is presented. The description is presented in Bacus normal form supplemented by the indexes of the semantic

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BABENKO, L. P., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 150-161

modules given in brackets and located directly behind the correspondent syntactic structural elements. A description of the semantics of the A-COBOL media is presented by describing their translation algorithms. This description is executed in the A-COBOL language in machine-independent form.

USSR UDC 8.74

GLUSHKOV, V. M., DOVGYALLO, A. M., PLATONOV, B. A., YUSHCHENKO, YE. L.

"Standard Pedagog Dialog Training System with the Avtor Service Mode for Teaching Programming Languages. Part 2"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 98-110 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V476)

Translation: A study was made of the basic characteristics of the Pedagog training system with the Avtor service mode for teaching programming languages. All of the software for the training system is divided into two parts: general including the training process control program and the program for interpreting the input operator; a special program including the programs defining the correct response to the system assignment (reactors) and the service files. Data is stored in the files on the basis of which the training process is controlled and the files also include data relating the control programs to the training material. The system is designed to teach the COBOL language to one student in the dialog mode (the DD-3 dispatcher of the Dnepr-2 digital computer offers the possibility of paralleling the training process for several trainees). 1/3

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GLUSHKOV, V. M., et al., Teoriya yazykov i metody postroyeniya sistem programmir. Kiev-Alushta, 1972, pp 98-110

The system programs are organized by the modular principle. The functioning of the module programs does not depend on their allocation in the common memory which permits changes to be introduced into the system. The volume of the system modules is on the average 100-140 instructions, and the information exchange between the modules is realized via the dynamic memory in the base register field. The Avtor mode of the training system is designed for correcting the service information files. It is noted that the specific nature of organization of the training system in which the general and special sections are clearly separated permits changing the operation of the system by correcting only the service information. These changes can, in particular, pertain to the sequence of assignments to the training, and in connection with this, the training algorithm and also the training subject. For the Avtor mode a special language has been created which permits correction of all the files of the special section of the training system. The presence of such possibilities in the training system permits efficient variation of the training process, dropping of the necessary and incorrect assignments, insertion of new ones, introduction of new assignment sequences, provision of new auxiliary material, and so on. It is possible to use the Avtor mode both after accumulating certain statistics on the course of the training process and directly during the course

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GLUSHKOV, V. M., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 98-110

of training. The programs in the Avtor mode are designed for operation in the dialog mode. The basic device for the Avtor dialog is teletype. The operators of the Avtor language input from teletype are recognized by the Monitor program which then transfers control to the corresponding programs -- interpreter -- which performs all the operations given in the operator. After processing, these programs return control to the Monitor program which goes to the state of waiting for the next message from the user. The operators of the Avtor mode are divided with respect to purpose into two groups: the operators for printing the file contents, the operators for correcting the files. Illustrative examples are presented for the Dnepr-2 training system. The bibliography has 8 entries.

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UDC 8.74

GLUSHKOV, V. M., DOVGYALLO, A. M., PLATONOV, B. A., YUSHCHENKO, YE. L.

"Standard Dialog Training System Training System Pedagog with the Avtor Service Mode for Teaching Programming Languages. Part 1"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 82-97 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V475)

Translation: A standard program training system Pedagog is described. The system is designed to teach programming languages in the dialog mode. The Pedagog training system performs the following functions with respect to training control: it makes the assignments to the trainee to which he must respond (which is realized by indicating the assignment coordinates in a special aid with the assignment); it receives and analyzes the trainee answers to the assignment; it gives the trainee the possibility of correcting the responses input to the computer memory from an individual device (teletype); it gives assistance to the trainee on request, indicating where the materials are located for the given assignment in the text; it offers the possibility to the trainee of repeating the assignment; it returns the answers to the assignment

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GLUSHKOV, V. M., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 82-97

from the memory to the trainee on his request or automatically if on completion of the correction of the answers he halts the operation of the system; it insures adaptation to the trainee, giving information on the errors in the answers at different levels of detail, helping him at the same time detect errors and simultaneously adapting to the capabilities of the user; it collects statistics on the course of the training process with respect to each user; it insures mastery by the user of the training material on a guaranteed level without allowing the user to carry out the next assignment to obtaining a direct response to the present one from it. In addition, the system executes the functions connected with the specific nature of the training process by applying a digital computer with time sharing operating in the dialog mode as the instructor. These basically are functions aimed at maintaining contact between the trainee and the computer: the information about what external systems devices must be used by the trainee at the defined points in time; the information about which operations it should perform on the external devices, what operators of the operation training language and in what cases it must be input; holding recording dialog with the trainee in which the system receives certain data from the user for its subsequent identification in the system; the control of the dialog with user in the training process (or in the process of joint solution of the training problem). There is 1 illustration and a 7-entry bibliography.
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USSR

UDC 8.74

BABENKO, L. P., DOVGOPOLAYA, L. I., TROKHIMENKO, V. S., USENKO, R. D., YUSHCHENKO, YE. L.

"Debugging Media in a Programming System"

V sb. Teoriya yazykov i metody postroveniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 309-314 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V486)

Translation: A study was made of means controlled by the user in the COBOL programming system for the Dnepr-21. In order to retain the general organization of the COBOL program the debugging instructions in the indicated system are in the form of an auxiliary division of the COBOL program, the so-called debugging section which is an instruction for the operations system with respect to the problem statement mode on the computer. The language of giving this instruction is similar with respect to form to the COBOL language and is based on its concept and terminology. All of the debugging operators in the COBOL-Dnepr-21 system are divided into the following categories: 1) the operator for initial running of the program; 2) the operators for interrupting the normal course of execution of the program on occurrence of certain situations which are provided for; 3) operators permitting additional information

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BABENKO, L. P., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 309-314

to be obtained on the process of execution of the program on occurrence of an interruptsituation or before beginning its execution; 4) operators permitting halting of execution of the program or continuation of it after an interrupt by transferring control to a section of the COBOL program. The syntax of the debugging section of the COBOL program is presented as an example.

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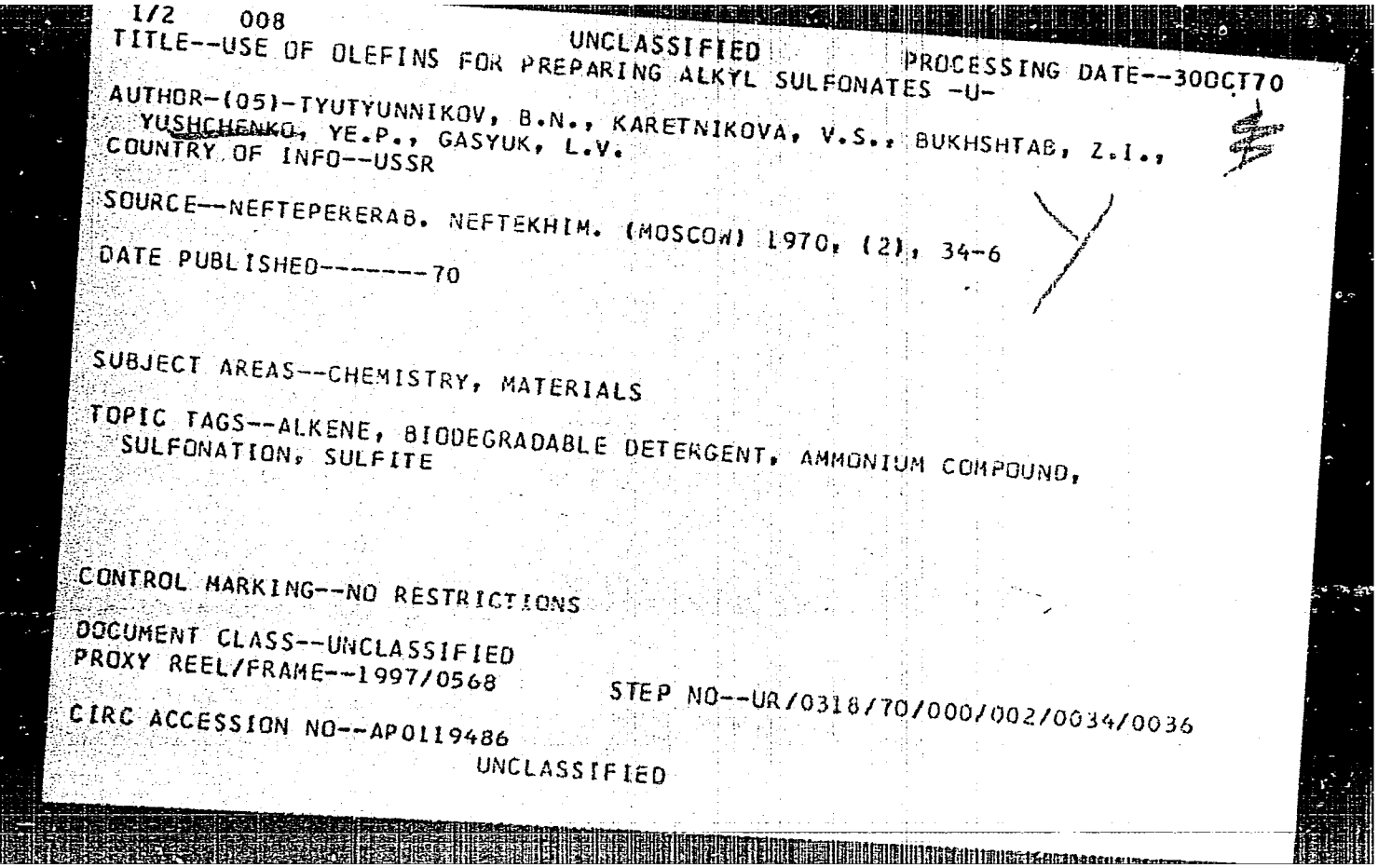

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USE OF OLEFINS FOR PREPARING ALKYL SULFONATES -U-

AUTHOR-(05)-TYUTYUNNIKOV, B.N., KARETNIKOVA, V.S., BUKHSHTAB, Z.I., YUSHCHENKO, YE.P., GASYUK, L.V.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 34-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ALKENE, BIODEGRADABLE DETERGENT, AMMONIUM COMPOUND, SULFONATION, SULFITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0568 STEP NO--UR/0318/70/000/002/0034/0036

CIRC ACCESSION NO--AP0119486

UNCLASSIFIED

2/2 008 UNCLASSIFIED

CIRC ACCESSION NO--AP0119486 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NH SUB4 HSO SUB3 WAS ADDED TO HIGHER ALPHA OLEFINS IN THE PRESENCE OF OXIDIZERS TO PRODUCE BIODEGRADABLE SULFONATE DETERGENTS. AIR BUBBLING AND PEROXIDES WERE USED IN THE PRESENCE OF SALTS OF METALS WITH VARIABLE VALENCE. THE REACTANTS WERE HEATED IN CYLINDRICAL REACTORS TO 80DEGREES AND AIR BUBBLED THROUGH FOR 4 HR, THEN THE REACTION MIXT. WAS TRANSFERRED TO THE SETTLER AND COOLED TO 20-50EGREES. AFTER 3-4 HR, A MINERAL SALT LAYER WAS SEPD. TO BOTTOM. THE UPPER HYDROCARBON LAYER WAS RECYCLED. THE MIDDLE LAYER, CONTG. AN ALC. AN. SOLN. OF SULFONATES, WAS DILD. 1:1 WITH H SUB2 O AND THE REMAINING HYDROCARBONS WERE EXTD. WITH GASOLINE. THE SULFONATES WERE CONCD. BY DISTG. OFF ALCS. AND H SUB2 O TO OBTAIN AN NH SUB4 ALKYLSULFONATE CONC. CONTG. 45-53PERCENT ACTIVE SUBSTANCE. DATA ON THE PROCESS ARE PRESENTED. FACILITY: KHAR'KOV. POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 621.43.011:533;621.5:533

SENKRVENKO, S. A., YUSHCHENKOVA, N. I.

"Effect of Condensation and the Third Phase on the Structure of a Supersonic Underexpanded CO_2 Jet"

11-ya Vses. konf. po vopr. isphareniya, goreniya i gaz. dinamiki dispersn. sistem, 1972 (11th All-Union Conference on Problems of Evaporation, Combustion and Gas-dynamics of Disperse Systems, 1972), Odessa, 1972, p 60 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B408)

Translation: The results of an experimental study of the effect of condensation and the solid phase on the structure of shock waves in the initial segment of supersonic underexpanded jets of carbon dioxide and air flowing into a rarefied space are presented. The experiments were conducted in a low-density wind tunnel over the following range of parameters: Mach number at the end of the nozzle 1.5-2, stagnation temperature 300-1200°K, degree of nonconformity 10-10^4, rarefaction criterion 10^{-4}-10^{-2}. Data on the effect of condensation and the solid phase on the dimensions and position of a Mach disc and the maximum size of the suspended discontinuity were obtained. The mass fraction of the condensate was obtained as a function of Mach number. Yu. F. Dityakin.

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USSR

YUSHCHENKOVA, N. I., KALENOV, Yu. A.

"Effect Which the Kinetics of Elementary Processes Have on the Make-up of Combustion Products in Supersonic Expansion"

Moscow, Khimiya i Fizika Nizkotemperaturnoy Plazmy, Moscow University Press, 1971, pp 304-307

Abstract: The authors investigate the influence which the kinetics of chemical reactions has on the composition of the products of combustion of hydrocarbon fuel formed by the components H_2, H, O_2, OH, CO, CO_2, and H_2O (mass fractions of the elements were C--0.25, H--0.10, O--0.65). Ten basic reactions are considered. The problem of determining the composition of the combustion products reduces to solution of equations in gas dynamics and chemical kinetics simultaneously with the equation of state of the reacting gas atmosphere. Two figures, bibliography of three titles.

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USSR

UDC 536.24:532.526

DAVYDOVA, N. A., YUSHCHIN, A. Ya.

"Experimental Investigation of Heat Transfer Accompanying Flow Around Flat Clipped Delta Wings"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamics Institute), 1970, 1, No 6, pp 117-125 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B609)

Translation: The paper presents the results of measurements of heat transfer in a supersonic flow at Mach 5 and 13.6 around three flat delta wings clipped by a cylinder with a radius of 1.5, 2.5 and 5 mm. Calorimetric pickups and dye-type heat indicators were used in the heat transfer measurements. A study is made of the effect which the angle of attack and the amount of clipping have on heat transfer to the wings. It is shown that conventional engineering methods of calculation of heat exchange can be used to evaluate the intensity of heat transfer on the lower surface of the wing. Resumé.

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USSR

UDC:532.546

BASHKIN, V. A., KOLINA, N. P., YUSHIN, A. Ya., Moscow

"Study of Heat Exchange on the Surface of a Two-Step Wedge in a Supersonic Stream"

Moscow, Mekhanika Zhidkosti i Gaza, No 5, Sep-Oct 73, pp 158-163

Abstract: Results are presented from a theoretical and experimental study of a boundary layer in the area of one local section of the surface of great curvature in the case of rarefaction flow. The theoretical study is performed within the framework of the classical theory of a laminar boundary layer in order to establish the primary trends in the distribution of local friction stress and local heat flow with increasing surface curvature. The experimental study was performed for the corner point on a stepped-angle wedge.

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USSR

UDC 629.78.015:536.24

DAVYDOVA, N. A., YUSHIN, A. YA.

"Experimental Study of Heat Transfer in Flow Over Plane Triangular Wings With Blunt Edges"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1970, Vol. 1, No. 6, pp 117-125 (from RZh-Raketostroyeniye, No 9, Sep 71, Abstract No 9.41.78)

Translation: Results of measurements of heat transfer in the flow over three plane triangular wings with edges blunted over a cylinder of radius r = 1.5, 2.5 or 5 mm in a supersonic flow with M_∞ = 5 and 13.6 are presented. Discrete calorimetric transducers and a heat sensitive dye were used in the heat transfer measurements. The effect of angle of attack and the degree of bluntness of the cylindrical edges on heat transfer to the wing was investigated. It is shown that current engineering methods of calculating heat exchange can be used to evaluate the intensity of heat transfer on the lower surface of the wing. 7 ill., 9 ref. Resume.

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USSR

UDC 621.352.035.4

YUSHINA, L. D., KARPACHEV, S. V., and KOCHERGINA, I. V.

"Galvanic Elements with a Lithium Anode and Solid Electrolyte"

Sverdlovsk, In-t elektrokhimii UNTs AN SSSR (Sverdlovsk, Institute of Electrochemistry, Ural Scientific Center of the Academy of Sciences USSR), 1972, 5 pp

Manuscript at All-Union Institute of Scientific and Technical Information, No 4608-72 Dep, Jul 72 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, No 23(II), 1972, Abstract No 23L187 Dep)

Translation: Halides of metals were used as cathodes in low-temperature galvanic cell with Li anode and solid electrolyte. The emf of such cells varied from 2.09 to 3.654 at 20± 2°C. Among all studied cathode materials the most promising were $CuCl_2 \cdot 2H_2O$ and WCl_6. The cell with WCl_6 cathode worked continuously for 336 hr, with an output of 15.5 $\mu A/cm^2$. The short-circuit current of this element was 32 $\mu A/cm^2$.

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USSR

UDC 621.316.001(1+24)

YUSHKA, A. A.

"Problem of Optimizing the Parameters of Municipal Distribution Networks"

V sb. Tekhn. progress v elektrosnabzh. gorodov (Technical Progress in Electric Power Supply of the Cities -- collection of works), Leningrad, Energiya Press, 1970, pp 190-195 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye 270)

Translation: The expediency of using the mean consumer load and mean length of cable section between them as initial characteristics is demonstrated. Analytical expressions for determining the technical-economic parameters of the power supply and distribution networks are obtained on this basis. A procedure is proposed for complex optimizing of the parameters of all links of the municipal network according to which the optimization is performed in steps. The interrelations between the parameters of networks of different voltages are established. There are 2 illustrations. [Power Engineering Institute of the Lithuanian SSR Academy of Sciences]

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Aerosols

USSR

UDC 543.84:(546.42+546.641):541.182.2/3

YUSHKAN, YE. I., ROVINSKIY, F. YA., STUKIN, YE. D., IOKHEL'SON, S. B., and TSYBUL'NIK, G. S.

"Express Method for the Determination of ^{90}Sr, ^{89}Sr, and ^{91}Y in Aerosol Samples"

Leningrad, Radiokhimiya, Vol 13, No 6, 1971, pp 872-875

Abstract: A rapid mathod for concurrent determination of ^{90}Sr, ^{89}Sr, and ^{91}Y has been developed. Aerosol samples collected on filters are combusted at 500° and treated repeatedly first with a mixture of hydrofluoric acid and nitric acid, then with concentrated HNO_3. Dry residue is dissolved in 1 M HCl, strontium and yttrium carriers are added, and strontium sulfates are precipitated by addition of a 5% H_2SO_4 solution followed by alcohol. The precipitate is separated by centrifugation and redissolved in 10% ammoniacal solution of trilone B. Yttrium remains in original mother liquor. From this step both materials are processed concurrently. To separate strontium it is converted to a carbonate salt, redissolved, $Fe(NO_3)_3$ is added to precipitate $Fe(OH)_3$ and strontium finally converted again to the carbonate, its activity is counted on a β-spectrometer. In the other sample yttrium is isolated in form of a hydroxide, redissolved to remove possible accompanying impurities of Ce and Sr

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YUSHKAN, YE. I., et al., Radiokhimiya, Vol 13, No 6, 1971, pp 872-875

by precipitating them as sulfates, and yttrium is finally reprecipitated as a hydroxide, converted to an oxalate and its activity is counted on a β-spectrometer. Both materials are obtained in yields of 75-85%.

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USSR UDC 669.11:620.178.7

OSTAPENKO, Zh. V., YUSHKEVICH, P. M., and GORYUCHKO, I. G.

"On the Impact Strength of 20K Carbon Sheet Steel"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 5, Sep-Oct 70, pp 35-37

Abstract: An investigation was made to determine the causes for the scattering of impact strength values observed on certain hot-rolled 15-20 mm steel sheets. The results of X-ray and chemical investigations showed that the scattering is related to the macrochemical inhomogeneity of the steel, and also to the liquefaction of carbon, manganese, and silicon. It is shown that an increase in carbon, manganese, and silicon reduces the impact strength.

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UDC 621.787:669.14.018.8

USSR

YUSHKEVICH, P. M., and STEPANOVICH, V. YE.

"Strain Hardening and Aging of Kh18N10T Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1970, pp 15-17

Abstract: It is sometimes difficult to produce transition and austenitic steel with a tensile stress of 170-180 kg/mm^2 at low temperatures, due to cracking as a result of high tensile stresses. Mechanical and isothermal hardening is accomplished by multiple cold straining of K18N10T steel at room temperature with a maximum of 5-7% for each deformation. Temperature constancy in straining is achieved by cooling the strip in water after each pass. As a consequence, after a reduction in area of 70% there is a tensile strength of 142 kg/mm^2 with 7% elongation; after a reduction in area of 97.5%, the tensile strength is 200 kg/mm^2 and elongation is 4%. After aging cold-strained steel for 1 hour at 475°C, the tensile strength is 170 kg/mm^2 and elongation 7% and 250 kg/mm^2 and 4%, respectively. The stress-strain curve reveals second and third hardening stages. It is suggested that additional strain and precipitation hardening of martensite is due to fixing of dislocations by austenite nuclei.

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USSR

UDC 621.791.756:669.15-194

PAVLIYCHUK, G. A., [redacted], Z. V., MEDOVAR, B. I., and [redacted], N. A.,
Electric Welding Institute imeni Ye. O. Paton, Academy of Sciences UkrSSR

"Certain Properties of Welds of Extremely Low-Carbon Corrosion-Resistant Austenitic Steels"

Kiev, Avtomaticheskaya Svarka, No 7, Jul 70, pp 10-13

Abstract: Together with some of their valuable properties, austenitic chromium-nickel steels have a grave shortcoming -- a tendency to intergranular corrosion when exposed to critical temperatures. This type of corrosion may be controlled by lowering the carbon content down to a level (0.02-0.03%) at which it dissolves in austenite at room temperature. A study has been conducted at the Electric Welding Institute imeni Ye. O. Paton to determine the corrosion resistance of extremely low-carbon (up to 0.02% C) EP550, EP551, EP552, EP553, and EP554 austenitic steels. The results of the mechanical tests of these steels at various temperatures are indicative of the high plasticity of the metal under conditions of deep cold (liquid nitrogen boiling temperature of -196° C). The steels are not susceptible to brittleness even after curing at 500° C for 500 hours. All the steels were tested for corrosion resistance of their welds in

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PAVLIYCHUK, G. A., et al, Avtomaticheskaya Svarka, No 7, Jul 70, pp 10-13

a boiling 15% solution of HNO_3 and 10% $K_2Cr_2O_7$ for 200 hours. The welds of the experimental steels, including those of the 1Kh18N9T control steel, were tested as welded. Similar tests were made for resistance of corrosion cracking in a boiling 42% aqueous solution of magnesium chloride, with the tensile strength equal to 90% of the yield point. Of all tested steels, the EP553 and EP554 grades appear to have the highest resistance to intergranular, total, and stress corrosion.

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1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SOLDER FOR SOLDERING ELECTRONIC EQUIPMENT -U-

AUTHOR-(05)-TUTORSKAYA, N.N., KOROLEVA, S.P., YUSHKINA, YE.T., PODVIGINA, O.P., CHERNOV, O.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,139

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--CHEMICAL PATENT, ELECTRONIC EQUIPMENT, SOLDER, CHEMICAL COMPOSITION, COPPER, NICKEL, GERMANIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1829 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132094

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--20NOV7C
CIRC ACCESSION NO--AA0132094
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE SOLDER, BASED ON CU, ALSO CONTAINS GE 1-5 AND NI 1-3PERCENT.

UNCLASSIFIED

USSR

YUSHKIS, Z. (Vilnius State University)

"Distribution of Values of Multiplicative Arithmetic Functions"

Vilnius, Litovskiy Matematicheskiy Sbornik, Vol XII, No 3, 1972, pp 185-199

ABSTRACT: g(m) is given as a real, multiplicative arithmetic function. It is assumed that for a suitable constant $c>0$ the series of prime numbers

$$\sum_{p}\sum_{\substack{\alpha=1\\ g(p^{\alpha})\neq 0}}^{\infty}\frac{|\ln|g(p^{\alpha})||}{p^{\alpha}},\quad \sum_{g(p)<0}\frac{1}{p^{1-c}}$$

converges and $\left|\ln\left|\frac{g(m)}{g(n)}\right|\right|\geqslant\frac{1}{(m,n)^{c_1}}$, where c_1 is a positive constant,

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YUSHKIS, Z., Litovskiy Matematicheskiy Sbornik, Vol XII, No 3, 1972, pp 185-199

for all m and n free of quadratics whenever $g(m) \neq 0$, $g(n) \neq 0$, $m \neq n$. Under these conditions, for all x the quantity of positive whole numbers $m \leq n$ which satisfy the inequality $g(m) < x$ is equal to

$$nF(x)+O\left(\frac{n \ln\ln \frac{1}{\rho_n}}{\ln \frac{1}{\rho_n} \ln\ln\ln \frac{1}{\rho_n}}\right).$$

Here $F(x)$ is designated as a distribution function which is defined through characteristic transformations

$$w_{kF}(t)=\prod_p \left(1-\frac{1}{p}\right)\left(1+\sum_{\alpha=1}^{\infty} \frac{|g(p^\alpha)|^{it} \operatorname{sgn}^k g(p^\alpha)}{p^\alpha}\right) \quad (k=0,1).$$

$$\rho_n = \sum_{\substack{g(p)\neq 0 \\ p>\exp \frac{\ln n \ln\ln\ln n}{3c \ln\ln n}}} \frac{|\ln g(p)|}{p}.$$

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UDC 621.039.524.034.3.001.5

PULYAYEV, V. F., RUSSIYANOV, A. F., YUSHKO, V. A.

"D1-P Experimental Unit for Studying Models of Heat Exchange Equipment"

Dissotsiiruyushch. gazu kak teplonositeli i rab. tela energ. ustanovok -- V sb. (Dissociating Gases as Heat Transfer Agents and the Working Medium of Power Plants -- Collection of Works), Minsk, Nauka i tekhn. Press, 1970, pp 105-108 (from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5U195)

Translation: A study is made of the flow chart of an experimental test unit for testing models of heat exchange equipment. The structural elements of the basic assemblies of the test unit and the experimental heat exchange equipment are described. The D1-P test unit provides for the possibility of studying the heat exchange and hydrodynamics of models of condensers, regenerative evaporators, gas regenerators and also the fuel assemblies of nuclear reactors with a dissociating heat exchange agent N_2O_4. There is 1 illustration.

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UDC 669.017:620.18

KARSANOV, G. V., KURDYUMOVA, G. G., MIL'MAN, Yu. V., PONOMAREV, Yu. N., SARZHAN, G. F., TREFILOV, V. I., FIRSTOV, S. A., KHAZANOVA, T. P., and YUSHKO, V. S., Moscow, Kiev

"Investigation of the Structural Condition and Mechanical Properties of a Two-Phase Alloy Containing Chromium and Nickel"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 71, pp 67-74

Abstract: The structure of a chromium alloy containing 34.4 wt % Ni was investigated by methods of electron-microscopy of thin foils and X-ray and metallographic analyses, after being subjected to various thermal and thermo-mechanical treatments. The investigation data are compared with mechanical bending test data and analyzed from the standpoint of dislocation concepts and ideas of the character of the electronic structure of transition metals. Reference is made to microphotographs of the structure of the hardened alloy Cr - 34.4 Ni and its structural changes resulting from annealing at different temperatures and to diagrams showing effects of annealing at 900°C on mechanical properties, lattice parameter, hardness, and relative quantities of α- and γ- phases. The probability is indicated of increasing the strength

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KARSANOV, G. V., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 71, pp 67-74

characteristics of the investigated alloy at the expense of precipitation strengthening. Five illustr., 12 biblio. refs.

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Acc. Nr: AP0049138 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0079

99693z Absorption spectra of complexes formed during the reaction of 4-substituted chalcones and methoxychalcones with antimony pentachloride in benzene. Lavrushin, V. F.; Yushko, V. K.; Tolmachev, V. N. (Khar'kov. Gos. Univ. im. Gor'kogo, Kharkov, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 155–60 (Russ). Absorption spectra were reported for $SbCl_5$ complexes of 18 chalcones *p*-$RC_6H_4CH{:}CHCOC_6H_4X$-*p* and *p*-RC_6H_4-$COCH{:}CHC_6H_4X$-*p* (R = H, or MeO; X = MeO, Me, Ph, H, Cl, or NO_2). The band displacements were correlated with the substituent consts. of R and X in C_6H_4 and were directly related to basicity of the ligand used and the strength of coordination bonds. The results were readily correlated by means of Brown-Okamoto equation.
G. M. Kosolapoff

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REEL/FRAME
19800944

Acc. Nr: AP0049137

Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code: 64P0079

99703c Spectrophotometric study of the formation of complexes by substituted methoxychalcones with antimony pentachloride in benzene solutions. Yushko, V. K.; Tolmachev, V. N.; Lavrushin, V. F. (Khar'kov. Gos. Univ. im. Gor'kogo, Kharkov, USSR). *Zh. Obshch. Khim.* 1970, 40(1), 160-5 (Russ). Spectrophotometric data are shown graphically for the system $SbCl_5$ and *p*-$MeOC_6H_4CH{:}CHCOC_6H_4X$-*p* (I) (X = MeO, Me, Ph, H, Cl, or NO_2) and *p*-$MeOC_6H_4COCH{:}CHC_6H_4X$-*p* (II); the effect of *o*-substituents MeO or H in I was also examd. The system produced complexes with increasing stability (estd. stability consts. are tabulated) with 1:1 compn. as the following X were introduced: NO_2, Cl, H, Ph, Me, MeO. The value of the Hammett reaction const. was −1.44 for I and −0.63 II. Introduction of *o*-MeO groups had a hypsochromic effect on the spectra, esp. after introduction of the 3rd MeO group and the extinction coeffs. declined as the no. of *o*-MeO groups increases, indicating the importance of steric factors, and increasing noncoplanarity of the mols. I formed complexes with 2 moles $SbCl_5$/mole ketone if the substituents were NO_2 or Cl in *p*-position. All others gave only equimolar complexes. G. M. Kosolapoff

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REEL/FRAME
19800943

Acc. Nr.: AM0104115

Ref. Code: UR0000

Yushko-Zakharova, O. Ye.; Ivanov, V. V.; Razina, I. S.; Chernyayev, L. A.

Geochemistry, Mineralogy, and Methods for Determination of Elements of the Platinum Group (Geokhimiya, mineralogiya, i metody opredeleniya elementov gruppy platiny) Moscow, "edra, 1970, 199 pp (SL:2044)

TABLE OF CONTENTS:

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REEL/FRAME

19870533

18

Acc. Nr. AM0104115

The book is beased on authors' works dealing with chemico-spectroscopic determination of platinum metals, as well as results of ore study in the X-ray microanalyzer and the JKhA-3A.

Given are characteristics of about 60 minerals of platinum metals; half of them were discovered in recent years due to the use of X-ray electron micro-sounding of ores...

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Reel/Frame
19870534

USSR UDC 616-008.922.1.04-092.9-085.835.3-07:616.12-073.97

YUSHKOV, M. A., SHAL'NEV, B. I., and EYGELES, A. M., Institute of Clinical and Experimental Surgery, Ministry of Health USSR, Moscow

"Electrocardiogram Indicators in Dogs Subjected to Intravenous Administration of Oxygen Microemulsion Under Severe Hypoxia"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 1, Jan/Feb 72, pp 88-90

Abstract: Severe hypoxia in dogs was brought about by a ventilation of lungs with nitrous oxide, or by asphyxia. In conjunction with hypoxia all dogs were given an intravenous injection of oxygen microemulsion. The state of the animal organism under these circumstances was checked by ECG. A ventilation of the lungs with N_2O for 12 min produced the following changes in the ECG: the R was decreased ($P < 0.05$) in 9 min, the S wave increased ($P < 0.05$) in 12 min, the voltage of the T wave increased ($P < 0.001$) in 12 min and the wave changed from 2 mm at the beginning of the experiment to 7 mm. These changes can be attributed to oxygen losses from the microemulsion during its passages through the lung vessels. On the other hand, it is quite possible that oxygen in alveoli was replaced by nitrogen or N_2O, followed by embolism of the lung vessels and the development of myocardial hypoxia. Asphyxia produced changes in the heartbeat by establishing a nodal rhythm for 3 min

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USSR

YUSHKOV, M. A., et al., Eksperimental'naya Khirurgiya i Anesteziologiya, No 1, Jan/Feb 72, pp 88-90

after the start of the experiment, decreased the P wave ($P < 0.05$) to 0.6 mm in 15 min, and increased the P-Q interval ($P < 0.05$). The latter was observed only during the first minute of asphyxia. There were no reliable changes present in the QRS deflection, neither with respect to its duration, nor its voltage during the entire 18 min of asphyxia accompanied by the intravenous injection of oxygen. Under these conditions the most prominent changes were in the T wave dynamics; its voltage increased from the first minute of the experiment and remained at this level. This is attributed to respiratory acidosis. Bleeding of animals during asphyxia and intravenous injection of oxygen produced only insignificant changes in the electrocardiogram.

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Aeronautical

USSR UDC 53.082.73.537.228.1

ZEGZHDA, S. A., YUSHKOV, M. P., Leningrad State University imeni A. A. Zhdanov

"Determination of the Frequencies of Fixed Piezoaccelerometers on the Basis of a Three-Mass Scheme"

Leningrad, IVUZ, Priborostroyeniye, No 11, 1970, pp 90-93

Abstract: Formulas are developed for finding the parameters of a three-mass scheme, the lowest natural frequencies of which coincide with sufficient precision with the lowest frequencies of a piezoaccelerometer which is regarded as a system with distributed parameters. 3 figures, 3 bibliographic entries.

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1/2 034 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETERMINING THE CONTACT RIGIDITY AND ELASTICITY OF MOUNTING ACCELEROMETERS -U-
AUTHOR-(04)-GAYUN, V.V., GUSEV, O.P., ZEGZHDA, S.A., YUSHKOV, M.P.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASIC RESULTS ARE PRESENTED FROM AN EXPERIMENTAL INVESTIGATION OF THE CONTACT RIGIDITY OF BUTT JOINTS. ON THE BASIS OF THESE RESULTS, SEMIEMPIRICAL RELATIONSHIPS ARE OBTAINED FOR CALCULATING FLAT BUTT JOINTS AND THREADED JOINTS OF ACCELEROMETERS. THE THEORETICAL AND EXPERIMENTAL DATA ARE COMPARED. FACILITY: LENINGRAD STATE UNIVERSITY.

UNCLASSIFIED

USSR

YUSHKOV, V. I., POTANIN, V. N., KHOLODKOV, V. K., GRUZINOV, V. K., SHCHUKIN, Yu. P.

"A Plasmatron With Magnetic Arc Stabilization"

Moscow, Khimiya i Fizika Nizkotemperaturnoy Plazmy, Moscow University Press, 1971, pp 62-64

Abstract: The authors investigate the behavior of an arc on a pilot model of a plasmatron with magnetic stabilization (diagrammed in the figure). The central uncooled graphite electrode 2 with outside diameter of 30 mm and the outer water-cooled copper electrode 1 of helical type with inside diameter of 50 mm are connected to a DC source. The outer conductor is surrounded by stabilizing coil 3 connected to an AC source. The arc was struck by a short, high-voltage rf pulse. The arc is rotated by the magnetic field produced by the outer electrode and the stabilizing coil. The shape of the outer electrode converts the arc to a helical line. Current alternation through the stabilizing coil reverses motion of the arc. Lens 4 projects a full-size image of the arc on the ground glass at the rear of camera 5. Four type FSK-1 resistors are fastened by pairs on the

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